Cancer Science for the Community

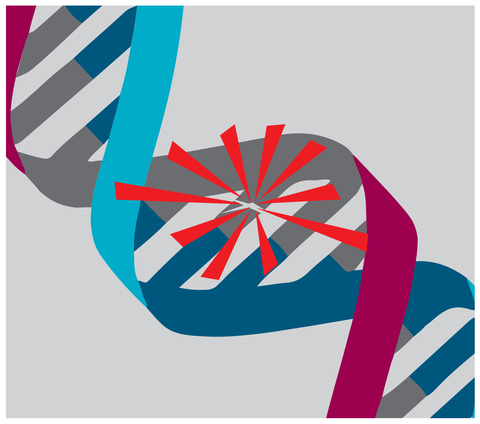
Introduction to the Science of Cancer (ISOC) is a free, multiuse course designed to help individuals and communities better understand and prevent cancer

The James

The Ohio State University
Comprehensive Cancer Center

Overview

Darrell E. Ward, MS, science writer and associate director for Cancer Communication, The Ohio State University Comprehensive Cancer Center – James Cancer Hospital and Solove Research Institute (OSUCCC – James)



ISOC consists of five modules:

- What is Cancer?
- Diagnosis of Cancer
- Treatment of Cancer
- Prevention of Cancer
- Cancer Research

Each module has seven or eight videos in which oncologists and cancer researchers at the OSUCCC – James explain key cancer concepts in user-friendly terms. For example, Module 3 includes the cancer treatment overview and videos on surgery, radiation, chemotherapy, targeted therapy and immune therapy.

ISOC videos and print material are available free online. Supplemental information includes downloadable slides and readings that summarize the lecture information, along with other readings and videos. The course can be taken completely or as selected lectures for workshops (see column 4, ISOC Workshops in Developing Countries).

Audiences

ISOC is designed for nonscientists. It can be helpful to the general public, people coping with cancer and their caregivers, nurses, teachers, health reporters, community health workers and those providing health care in under-resourced areas or countries.

Future Use

A book version of ISOC is planned that duplicates the course structure and repurposes the scripts and graphics. We anticipate producing both online open-access and print versions for maximum availability.

ISOC Online

Thomas Evans, manager for Open Learning, Ohio State's Office of Distance Education and eLearning

ISOC began as a free, open course first on the Coursera platform in 2015, then on iTunes U. In 2017, it was moved to the Canvas Network, and an independent website has been developed as a resource for teachers and college instructors (see next column, ISOC in the Classroom).

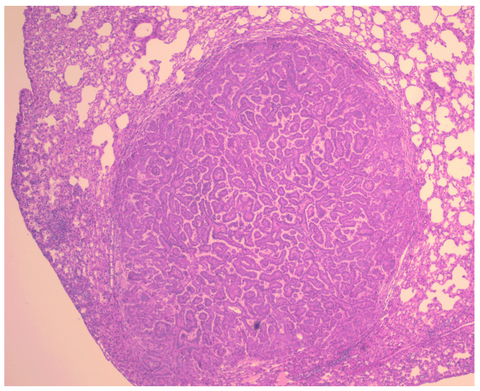
From October 2015 to January 2018:

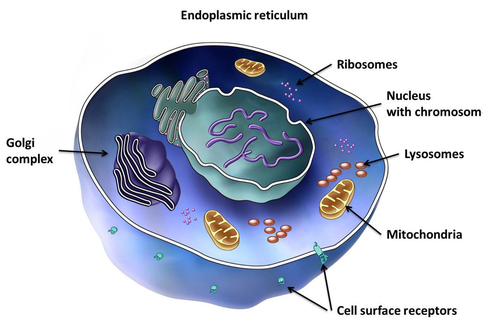
- On Coursera, 10,560 people have interacted with the course.
- On iTunes U, the course has been browsed more than 4,600 times with more than 8,000 downloads and counting.
- On Canvas Network, more than 700 people have interacted with the course, and this number continues to rise as the course remains active.
- Overall, the course has reached more than 125 nations, 40% of them being emerging economies.

A Typical Student Statement

Carla Reis Machado, 28, Brazil: I'm a dentist who, in her free time, works as a medical translator. My favorite subjects are physiology and pathology. I just would like to thank all the staff of this course. It was an amazing experience, and all knowledge shared through the course was priceless. Thank you all for taking time in your busy schedules and sharing all your vast experience with us. Cheers!

To view the course, visit
go.osu.edu/cancercourse





Examples of illustrations used in ISOC

ISOC in the Classroom

Students in class at Bio-Med Science Academy, Rootstown, Ohio

Marisa Manocchio, engineering teacher at Bio-Med Science Academy in Rootstown, Ohio

I offered ISOC to 9th through 12th grade students as a three-week elective presented two hours daily at Bio-Med Science Academy, a year-round public STEM+M school (Science, Technology, Engineering, Mathematics + Medicine).

Nineteen students enrolled. We covered modules 1-4. The course went well, and the kids enjoyed the information a lot. I soon found, however, that they lost sight of what these diseases and treatments do to people who live with it.

Connecting students to content

To keep students engaged during the two-hour lectures and to connect them to the content, I modified the course in several ways:

- I added videos recorded by real cancer survivors who talked about how cancer and cancer treatment affected their lives.
- Students answered questions using information learned from the course.
- They discussed choices they make in life that put them at risk for cancer.
- They shared personal experiences about how cancer has affected their family and friends.

When I teach ISOC again

I would like to:

- Invite guest speakers and discuss careers in the cancer world.
- Have students interview professionals in cancer-related fields that interest them.
- Complete a project that incorporates information learned from the course.

ISOC content can be adapted to high school courses such as health, biology, chemistry, anatomy, cellular biology and even language arts. The complete course and help for teachers who want to use it in the classroom are available at

https://u.osu.edu/cancerforteachers/.

ISOC Workshops in Developing Countries

Darrell E. Ward

Selected course videos and related print material were saved to a flash drive to present cancer-education workshops for nurses and other staff at two rural hospitals in Zimbabwe. Two full-day cancer workshops were presented for staff at St. Albert's Mission Hospital (80 attendees) and two half-day workshops at Karanda Mission Hospital (50 attendees). Two or three videos were presented, then the moderator, usually a doctor or physician assistant, placed the information into local context and answered questions.

Printed course material was provided to help attendees follow the video lectures. Anonymous pre- and post-tests revealed areas where staff needed additional knowledge.

St. Albert's Mission Hospital used its chapel to host two day-long cancer education workshops, using ISOC videos

A physician at St. Albert's moderated the ISOC workshop, which was attended by nurses, midwives and other staff

©2018 The Ohio State University Wexner Medical Center JAME2017062